Replaced by Art. 34



WHAT IS CLAIMED IS:

1. An imaging system comprising:

an imaging device which outputs a plurality of digital signals each of which indicating an amount of light irradiating on a corresponding one of two-dimensionally arranged pixels on which light irradiates;

a pre-processor which reduces an amount of data of the plurality of the digital signals output by said imaging device;

a processor which processes the plurality of the digital signals;

a memory which stores the plurality of the digital signals; and

a memory controller which store the plurality of the digital signals output by said pre-processor to said memory, and reads the plurality of the digital signals from said memory to output the plurality of the digital signals to said processor.

2. The imaging system according to claim 1, wherein said pre-processor comprises a first reducing device which reduces an amount of information of each of the plurality of the digital signals.

3. The imaging system according to claim 2, wherein said first reducing device comprising:

a detector which detects an average signal amount which indicates an average value of a signal amount of the plurality of the digital signals for one screen output by said imaging device;

a calculating device which calculates a gain to be applied to the plurality of the digital signals so that the average value equals to a predetermined value; and

a gain adjusting device which adjusts, using the gain, a gain of the plurality of the digital signals.

4. The imaging system according to claim 2, wherein the two-dimensionally arranged pixels include a set of pixels each of which detecting light of a corresponding one of a plurality of color components;

said imaging device outputs the plurality of the digital signals each of which indicating an amount of light detected by a corresponding one of the two-dimensionally arranged pixels on which light irradiates; and

said first reducing device comprises:

a detector which detects, using the plurality of the digital signals output by said imaging device, a first average signal amount indicates an first average value of a signal amount of the plurality of the digital signals for

one screen in correspondence to each of the plurality of the color components;

a calculating device which calculates a first gain to be applied to the plurality of the digital signals in correspondence to each of the plurality of the color components so that the first average signal amounts in correspondence to the plurality of the color components are the same; and

a first white balance adjuster which does white balance adjustment by adjusting, using the first gain corresponding to each of the plurality of the color components, a gain of the plurality of the digital signals in correspondence to each of the plurality of the color components.

5. The imaging system according to claim 4, wherein said first reducing device further comprises a second white balance adjuster,

said second white balance adjuster does white balance adjustment by adjusting a gain of a plurality of digital signals in correspondence to each of the plurality of the color components output by said imaging device, using a predetermined gain in correspondence to each of the plurality of the color components, and

an output signal of said second white balance adjuster

is input to said first white balance adjuster.

6. The imaging system according to any one of claims 2 to 5, wherein said first reducing device further comprises a gradation correcting device; and

said gradation correcting device convert the plurality of the digital signals input thereto to a plurality of converted digital signals each of which having a predetermined amount of information smaller than an amount of information of each of the plurality of the digital signals input thereto, by correcting gradation of the plurality of the digital signals input from any one of said imaging device, said gain adjusting device, and said first white balance adjustor to.

7. The imaging system according to any one of claims 2 to 6, wherein said first reducing device further comprises a compression device which compresses a plurality of digital signals input thereto to reduce an amount of information of each of the plurality of the digital signals.

8. The imaging system according to claim 7, wherein said compression device compresses the plurality of the digital signals input thereto into the plurality of the digital signals all having the same amount of information.

9. The imaging device according to claim 2, further comprising:

a driver which drives said imaging device;

a function controller which controls a transfer of digital signals among said first reducing device, said memory controller, and said processor; and

a mode setter which sets one of a first mode and a second mode to each of said driver and said function controller; wherein

said first reducing device comprises a second reducing device and a third reducing device;

each of said second and third reducing devices reduces an amount of information of each of the plurality of the digital signals output by said imaging device; and

said function controller outputs the plurality of the digital signals input from said second reducing device to said third reducing device, outputs the plurality of the digital signals input from said third reducing device to said memory controller, and outputs the plurality of the digital signals input from said memory controller to said processor, when the first mode is set by said mode setter, while outputs the plurality of the digital signals input from said second reducing device to said memory controller, outputs the plurality of the digital signals input from

said memory controller to said third reducing device, and outputs the plurality of the digital signals input from said third reducing device to said processor, when the second mode is set by said mode means.

10. The imaging system according to claim 1, wherein said pre-processor comprises a thinning out device which thins out the plurality of the digital signals.

11. The imaging system according to claim 10, wherein said thinning out device outputs a first control signal a level of which changes at a constant cycle to said memory controller,

said pre-processor outputs the plurality of the digital signals output by said imaging device and the first control signal to said memory controller together, and

said memory controller stores to said memory only a digital signal among the plurality of the digital signals which the digital signal is input to said memory controller when the control signal is at a predetermined level.

12. The imaging system according to claim 11, wherein said pre-processor further comprises an interpolation device;

said interpolation device interpolates the plurality

of the digital signals output by said imaging device to output a plurality of interpolated digital signals obtained as a result of the interpolation; and

said pre-processor outputs the first control signal and the plurality of the interpolated digital signals to said memory controller together.

13. The imaging system according to claim 11 or 12, further comprising:

a release button;

a second detector which outputs a status signal indicating whether said release button is pushed or not; and

a thinning out controller which starts or stops an operation of said thinning out device in accordance with the status signal output by said second detector.

14. The imaging system according to claim 13, further comprising:

a mode switching device which outputs a mode signal indicating one of a first mode and a second mode; and

a mode control device which controls said memory controller in accordance with the mode signal output by said mode switching device; wherein

said processor includes a first compression device and

a second compression device; and

said mode control device makes said memory controller read the plurality of the digital signals from said memory to output the plurality of the digital signals to said first compression device when the mode signal indicating the first mode is input, while makes said memory controller read the plurality of the digital signals from said memory to output the plurality of the digital signals to said second compression device when the mode signal indicating the second mode is input.

15. The imaging system according to any one of claims 11 to 14, further comprising:

a selector which selects the number of recording pixels to output a second control signal indicating the number of recording pixels selected thereby; and

a ratio controller which determines a ratio of thinning out the plurality of the digital signals in accordance with the second control signal output by said selector, and controls a change cycle of the level of the control signal output by said thinning out device in accordance with the ratio.

## ABSTRACT OF THE DISCLOSURE

An imaging system includes an imaging device (12, 14, 15) which outputs a plurality of digital signals each of which indicating an amount of light irradiating on a corresponding one of a plurality of pixels arranged in two dimensions, a pre-processor (24) which reduces an amount of data of the plurality of the digital signals output by the imaging device (12, 14, 15), a processor (18-20) which processes digital signals, a memory (17) which stores the digital signals, an a memory controller (16) which stores the plurality of the digital signals output by the pre-processor (24) in the memory (17) and reads the plurality of the digital signals from the memory (17) to output the plurality of the digital signals to the processor (18-20).